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ABSTRACT

This manual contains a work sample intended to assess a handicapped student's interest in and potential to successfully pass a clerical business machine course (typing) in a comprehensive or vocational school. Section 1 describes the assessment, correlates the work performed and worker traits required for completing the work sample, and lists related occupations and DOT codes. Instructions to the evaluator are provided in the next section. The conditions and administration equipment are detailed, and the set-up and breakdown procedures are illustrated. Section 3, on administration, provides a student orientation including student material with an explanation and illustration of equipment and/or procedures. This section also contains instructions for task procedures actions to be taken, as well as post sample interview topics. Section 4 explains the method of scoring and provides forms. Section 5 lists technical data (norms, reliability, validity) to be included in a supplement to this manual. Contents of the section on maintenance and construction include information on tool and equipment maintenance and a materials list (equipment, source, price). Section 7 cites references. An appendix defines terms. (YLB)

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CLERICAL MACHINE OPERATOR

Work Sample

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I. INTRODUCTION

A. Assessment Description

The Clerical Machine Operator - Typist Work Sample is intended to assess a student's interest in, and potential to successfully pass, a Clerical Business Machine Course (typing) in a comprehensive or vocational high school. Typist (Clerical) DOT 203.582-066 or in a similar clerical machine operator job.

The Clerical Machine Operator - TYpist Work Sample falls within the Typists and Typewriting Machine Operators - Occupational Group Arrangement and Clerical Machine Operation - Worker Trait Group, to which the Work Sample is related.

B. Related Occupations

Clerical Machine Operator Typist Work Sample

DOT description:

TYPIST (Clerical) (203.582.066)

Related Occupations	DOT Code
Typesetter - Perforator Operator	203.582.062
Perforator Typist	203.582.038
Magnetic Tape Typewriter Operator	203.582.034
Data Typist	203.582.022
Clerk - Typist	203.582.010

II. INSTRUCTIONS TO THE EVALUATOR

A. Work Sample Condition

The Clerical Machine Operator Typist Work Sample is to be administered indoors with good overhead lighting and moderate noise level from neighboring work areas. The sample involves physical demands such as sitting (good posture), sedentary work, reaching, handling, fingering and/or feeling, talking, hearing and seeing. It can be done by a two armed person sitting in a wheel chair.

The sample is designed to simulate the functions and methods of a typist in the Clerical Area, as it may exist in a training program of a comprehensive or technical school.

The sample is not physically hazardous in any way, and requires no safety equipment, although all health and safety precautions should be adhered to regarding Occupational Safety and Health Act requirements as well as those safety factors which may be encountered in local industry and unique job requirements.

B. Administration Equipment

The following equipment is required prior to administration:

Evaluator equipment:

- Stopwatch
- Manual for the Clerical Machine Operator-Typist Work Sample
- Task Observation Sheet

Student Equipment:

- Work table
- Typewriter
- Paper
- Diagrams, charts, illustrations

C. Setup and Breakdown

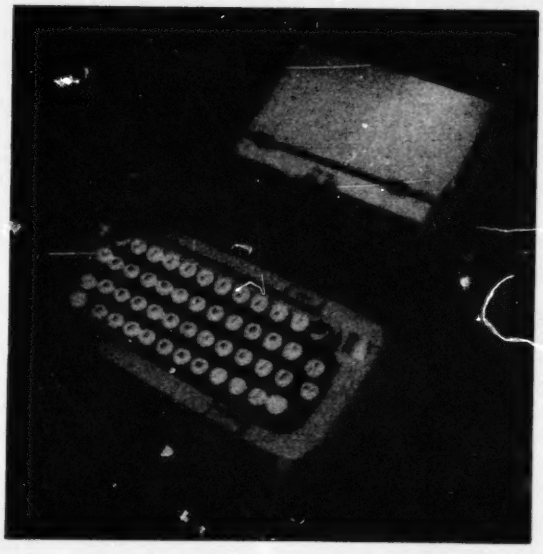
All illustration of correct setup and breakdown procedures for the Clerical Machine Operator-Typist Work Sample is shown in the following illustrations:

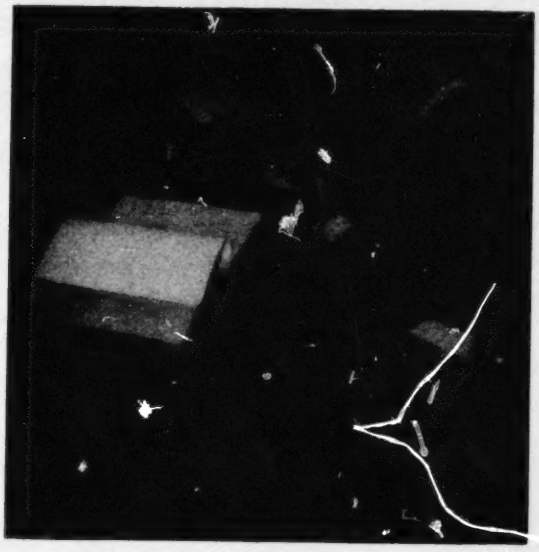
The typewriter is placed on the desk or work table, as it would be in an actual office or classroom. The student sits facing the front of the typewriter.

While giving instructions and pointing out work sample parts, the evaluator stands to the side of the work table so as not to obstruct the student's view of the work sample.

Figure 1 (2 views)

Correct Work Sample Setup:





The work performed and Worker Traits required for completing the Clerical Machine Operator Typist Work Sample are as follows:

WORK PERFORMED	WORKER TRAITS REQUIRED
1. Sits in chair with body erect, leaning slightly forward.	GED 3 SVP 1 APT V-3, P-3 WS 8 PD 5 WC I WA 3
2. Locates and identifies home-row keys, third row keys, numbered keys, and bottom row keys.	GED 3 SVP 1 APT G-4, V-4, P-4, K-3, F-3, M-3 WS 2 PD 4 WC I WA 3
3. Places fingers of left hand on home row keys, A, S, D, F.	GED 3 SVP 1 APT V-4, Q-3, K-4, F-4, M-4 WS 2, 8 PD 4, 5, 6 WC I WA 3
4. Places fingers of right hand on home row keys, J, K, L.	GED 3 SVP 1 APT V-4, Q-3, K-4, F-4, M-4 WS 2, 8 PD 4, 5, 6 WC I WA 3

WORK PERFORMED	WORKER TRAITS REQUIRED
5. Holds right thumb under right hand to maneuver space bar.	GED 3 SVP 1 APT V-4, Q-3, K-4, F-4, M-4 WS 2, 8 PD 4, 5, 6 WC I WA 3
6. Types each letter of the home row keys with left hand and right hand fingers.	GED 3 SVP 1 APT G-3, Q-3, K-3, F-3, M-4 WS 2, 8, 10 PD S, 4 WC I WA 3, 9
7. Types each letter of home row keys three times each.	GED 3 SVP 1 APT G-3, Q-3, K-3, F-3, M-4 WS 2, 8, 10 PD S, 4 WC I WA 3, 9
8. Moves the carriage return lever to start a new typing line.	GED 3 SVP 1 APT G-3, Q-3, K-3, F-3, M-4 WS 2, 8, 10 PD S, 4, 5, 6 WC I WA 3, 9
9. Depresses space bar between each set of letters as it is indicated.	GED 3 SVP 1 APT G-3, Q-3, K-3, F-3, M-4 WS 2, 8, 10 PD S, 4, 5, 6 WC I WA 3, 9

WORK PERFORMED	WORKER TRAITS REQUIRED
10. Reaches for left hand third row keys, keeping the remaining fingers of the left hand on the home row keys.	GED 3 SVP 1 APT G-3, Q-3, K-3, F-3, M-4 WS 2, 8, 10 PD S, 4, 5, 6 WC I WA 3, 9
11. Reaches for right hand third row keys, keeping remaining fingers of the right hand on the home row keys.	GED 3 SVP 1 APT G-3, Q-3, K-3, F-3, M-4 WS 2, 8, 10 PD S, 4, 5, 6 WC I WA 3, 9
12. Reaches for the left hand numbered row	GED 3 SVP 1 APT G-3, Q-3, K-3, F-3, M-4 WS 2, 8, 10 PD S, 4, 5, 6 WC I WA 3, 9
13. Reaches for the right hand numbered row keys, keeping the the remaining fingers of the right hand on the home row keys.	GED 3 SVP 1 APT G-3, Q-3, K-3, F-3, M-4 WS [illegible], 8, 10 PD S, 4, 5, 6 WC I WA [illegible], 9
14. Reaches for the left hand bottom row keys, keeping the remaining fingers of the left hand on the home row.	GED 3 SVP 1 APT G-3, Q-3, K-3, F-3, M-4 WS 2, 8, 10 PD S, 4, 5, 6 WC I WA 3, 9

WORK PERFORMED	WORKER TRAITS REQUIRED	
15. Reaches for the right hand bottom row keys keeping the remaining fingers of the right hand on the home row keys.	GED	3
	SVP	1
	APT	G-3, Q-3, K-3, F-3, M-4
	WS	2, 8, 10
	PD	S, 4, 5, 6
	WC	I
	WA	3, 9

Timing Procedures

The Work Sample is timed from the moment the student signifies that he or she understands the instructions and indicates that he or she is ready to begin to type, until the students indicates completion.

Quality Checks:

Quality is checked by the evaluator, once the student has completed the Work Sample and compares the work to Task Observation and Scoring Record.

III. ADMINISTRATION

A. Student Orientation

Read or paraphrase the following information to the student:

The Work Sample that you are going to do is called the Clerical Machine Operator-Typewriter Work Sample.

The work you will be doing on this work sample is a series of steps that a student experiences as a basis or introduction in the typewriting class.

On this Work Sample, you will carefully look over the typewriter and chart set-up. In looking over this set up, your job on this Work Sample will be to type letters from the home row, third row, numbered row and bottom row keys. You will also utilize the space bar between each set of letters and numbers.

Please read all instructions carefully before starting to work.

The purpose of the home row keys is to establish a home base for the fingers which is determined to be the most accessible or easiest row of keys in order to learn and reach the surrounding keys on the typewriter.

The function of the space bar is to separate words, groups of numbers or beginning of new paragraphs. Almost one in every five strokes is made with the space bar.

Before you start the required work, understand and know how to manipulate the keys and space bar on the typewriter. The following pages will illustrate and explain the positioning of hands and fingers on the home row keys, and also illustrate how the fingers reach the other keys on the typewriter. After you have done this you may begin the typewriting Work Sample. I'll show you how to do the work in a minute, but first, do you have any questions?

B. *Instructions and Demonstrations*

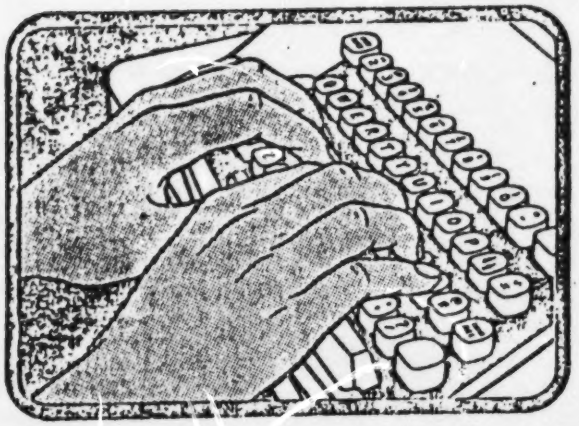
Sighted Population

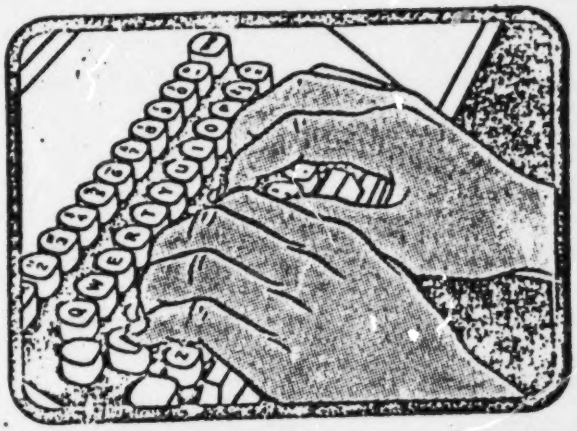
STATEMENT	ACTION
Sit in the chair with your body leaning forward. Place feet firmly on the floor; do not cross your knees, with each foot a little apart and slightly ahead of the other.	*Point to illustration and evaluator demonstration.*
Observe the keys of the typewriter and look at the diagram of keyboard.	*Same as above.*
Looking at the illustration, place each finger of the left hand to the corresponding left hand home row keys: *A - Fourth or little finger* *S - Ring finger* *D - Middle finger* *F - Index finger*	*Point to illustration. Evaluator demonstration.*
Looking at the illustration, place each finger of the right hand to the corresponding right hand home row keys: *J - Index finger* *K - Middle finger* *L - Ring finger* *; - Fourth finger of little finger*	*Same as above.*
Keeping your fingers resting on the home row keys, hold your right thumb under your right hand to maneuver the space bar when indicated.	*Evaluator demonstration.*
With fingers placed on the home row keys, type the following letters three times each: *"A" - with little finger and depress space bar.* *"S" - with ring finger and depress space bar.* *"D" - with middle finger and depress space bar.* *"F" - with index finger and depress space bar.* *Now type "FGF", "G" is the next key to the right of "F" on home row.*	*Evaluator demonstration.*

STATEMENT	ACTION
After you have typed "FGF", move the left hand, palm down, to the carriage return lever; move it forward to return the carriage to the next typing line.	Evaluation demonstration.
With fingers placed on the home row keys, type the following letters three times each: "J" - with index finger and depress space bar. "K" - with middle finger and depress space bar. "L" - with ring finger and depress space bar. ";" - with little finger and depress space bar. Now type "JHJ", "H" is the next key to the left of the "J" on home row. Return carriage to next typing line.	Same as above.
Now look at the illustration to locate the letters of the third row. Keeping your fingers on the home row keys, type the following letters: "AQA" - with your little finger and depress space bar. "SWS" - with your ring finger and depress space bar. "DED" with your middle finger and depress space bar "FTF" with your index finger and depress space bar. "FRF" with your index finger and return carriage to next typing line.	Point to illustration. Evaluator demonstration.
Keeping your fingers on the home row keys, type the following letters: "JUJ" with your index finger and depress space bar. "KIK" with your middle finger and depress space bar. "LOL" with your ring finger and depress space bar. ";P;" with your little finger and return carriage to next typing line.	Evaluation demonstration.
Now look at the illustration to locate the letters of the bottom row. Keeping your fingers on the home row keys, type the following letters: "AZA" - little finger and depress space bar. "SXS" - ring finger and depress space bar "DCD" - middle finger and depress space bar. "FVF" - index finger and depress space bar "FBF" - index finger and return carriage to next typing line.	Point to illustration. Evaluator demonstration

STATEMENT	ACTION
Keeping your fingers on the home row, type the following letters: "JMJ" - index finger and depress space bar. "K,K" - middle finger and depress space bar "L,L" - ring finger and depress space bar. ";/;" - little finger and return carriage to next typing line.	Evaluator demonstration.
Now look at the illustration to locate the numbered keys. Keeping your fingers on the home row keys, type the following: "A1A" - little finger and depress space bar. "S2S" - ring finger and depress space bar. "D3D" - middle finger and depress space bar. "F4F" - index finger and depress space bar. "F5F" - index finger and return carriage to next typing line.	Point to illustration. Evaluator demonstration.
Keeping your fingers on the home row keys, type the following: "J6J" - index finger and depress space bar. "J7J" - index finger and depress space bar. "K8K" - middle finger and depress space bar. "L9L" - ring finger and depress space bar. ";0;" - little finger and return carriage to next typing line.	Evaluator demonstration.

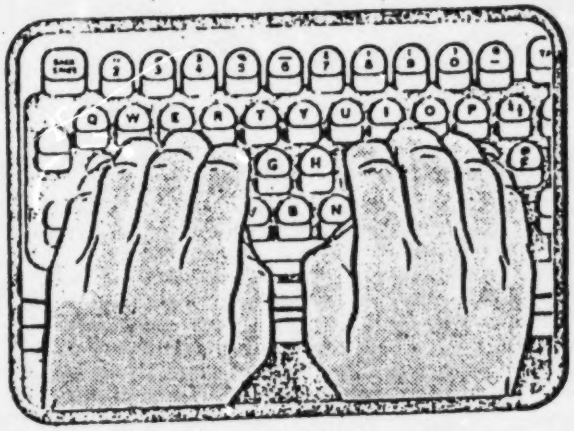
Position of Hands





When typing, keep your fingers deeply curved. Girl typists must keep fingernails neatly trimmed. You can't type with long nails.

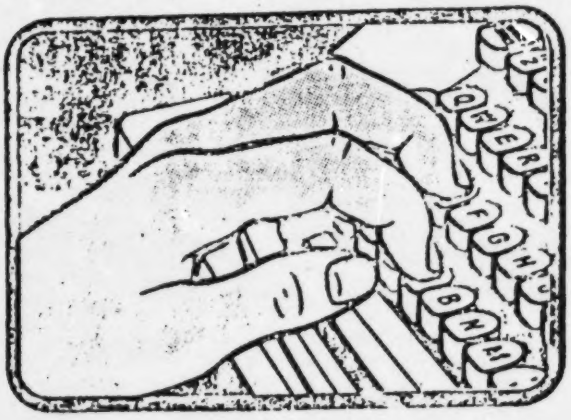
Do not permit your hands to turn over on the little fingers. Hold the hands directly over the keys. Turn the hands inward slightly to get straight strokes.

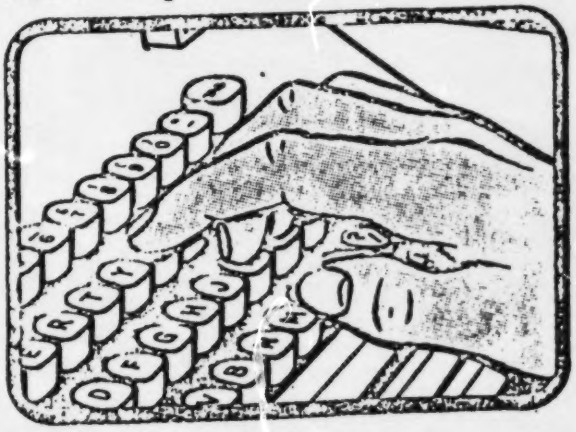


Don't buckle your wrists upward. Hold your wrists down near, but not resting on, the front frame of the typewriter. The forearms should form a parallel line with the slope of the keyboard.

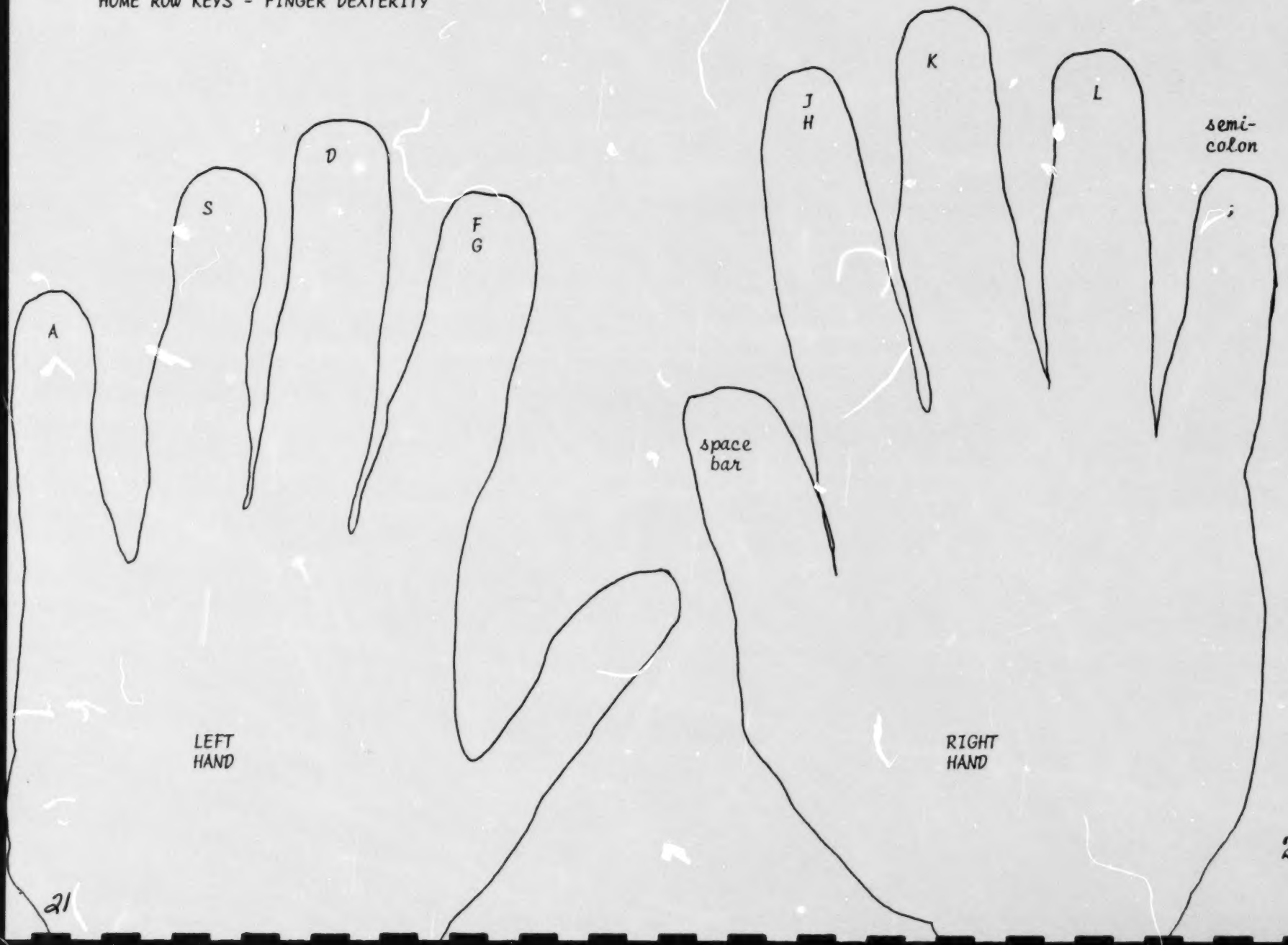
Don't rest your fingers heavily on the home keys. Barely touch them with your fingertips. Feel the keys; don't smother them.

When a finger makes a reach from its home position to strike another key, the other fingers remain on or near their home keys. Such reaches are made by the finger without twisting the wrist or moving the arm or elbow.





HOME ROW KEYS - FINGER DEXTERITY



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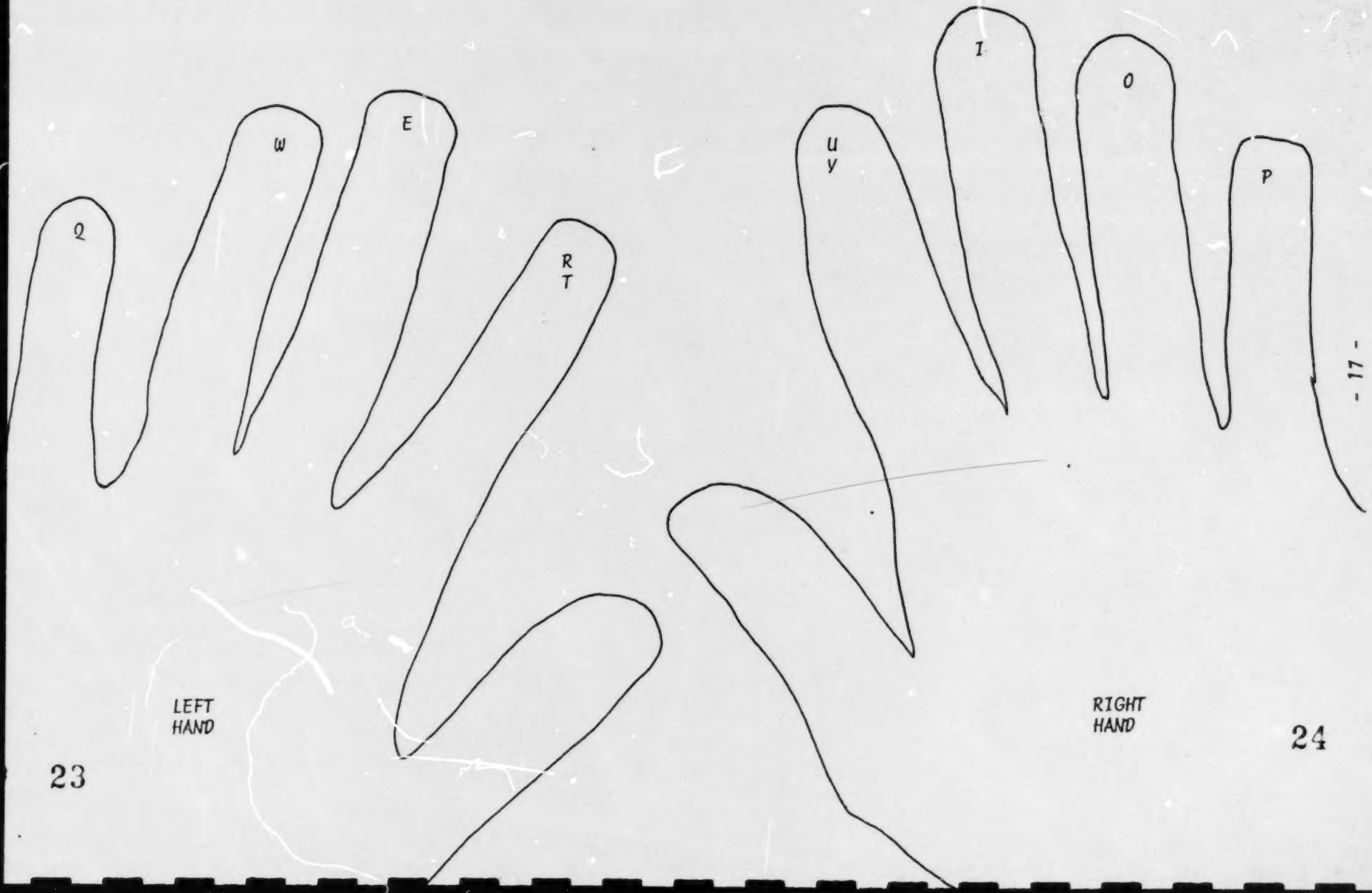
22

THIRD ROW KEYS - FINGER IDENTIFICATION



23

24

BOTTOM ROW KEYS - FINGER IDENTIFICATION

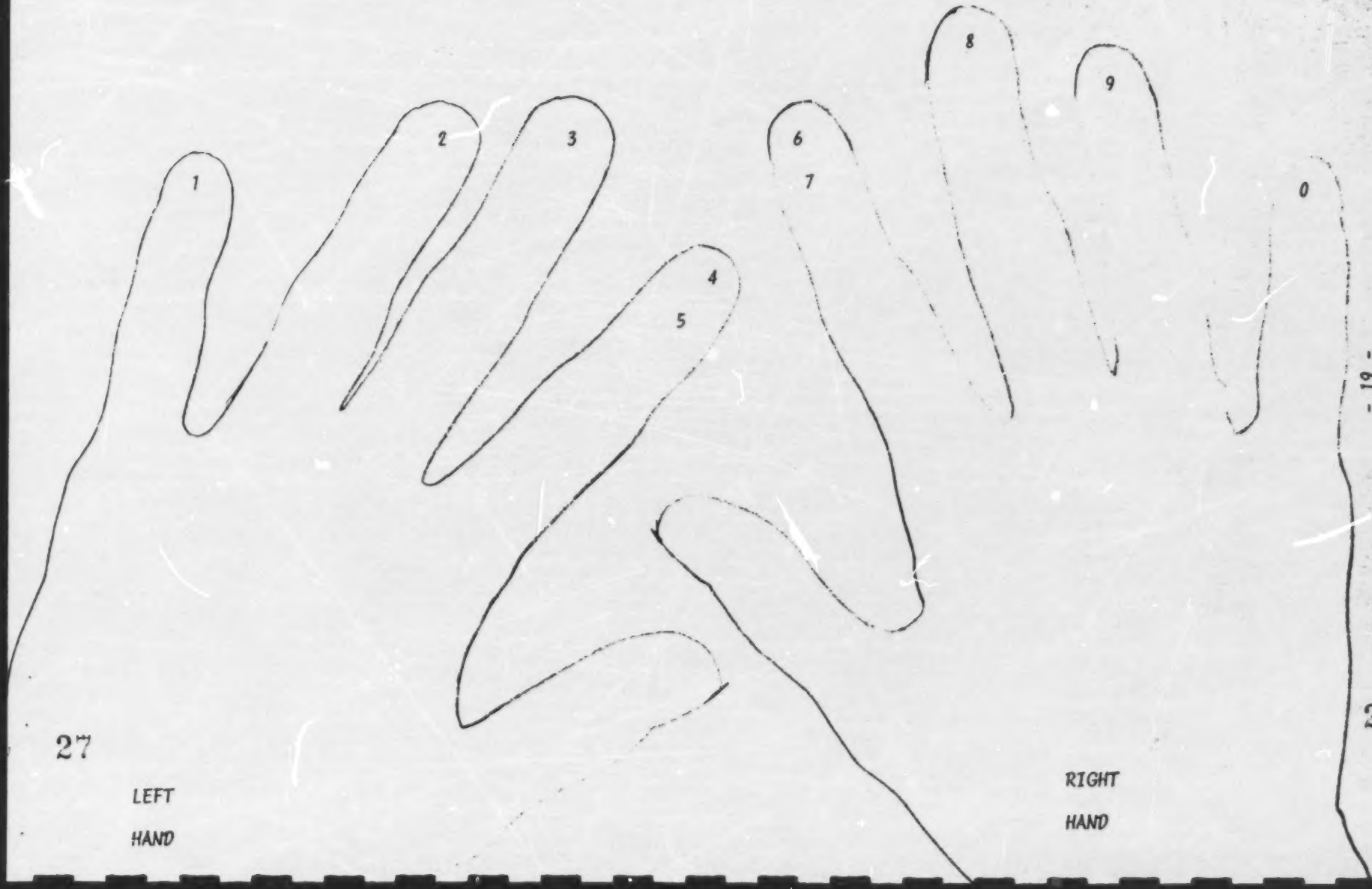
LEFT HAND

25

RIGHT HAND

26

NUMBER KEYS - FINGER IDENTIFICATION



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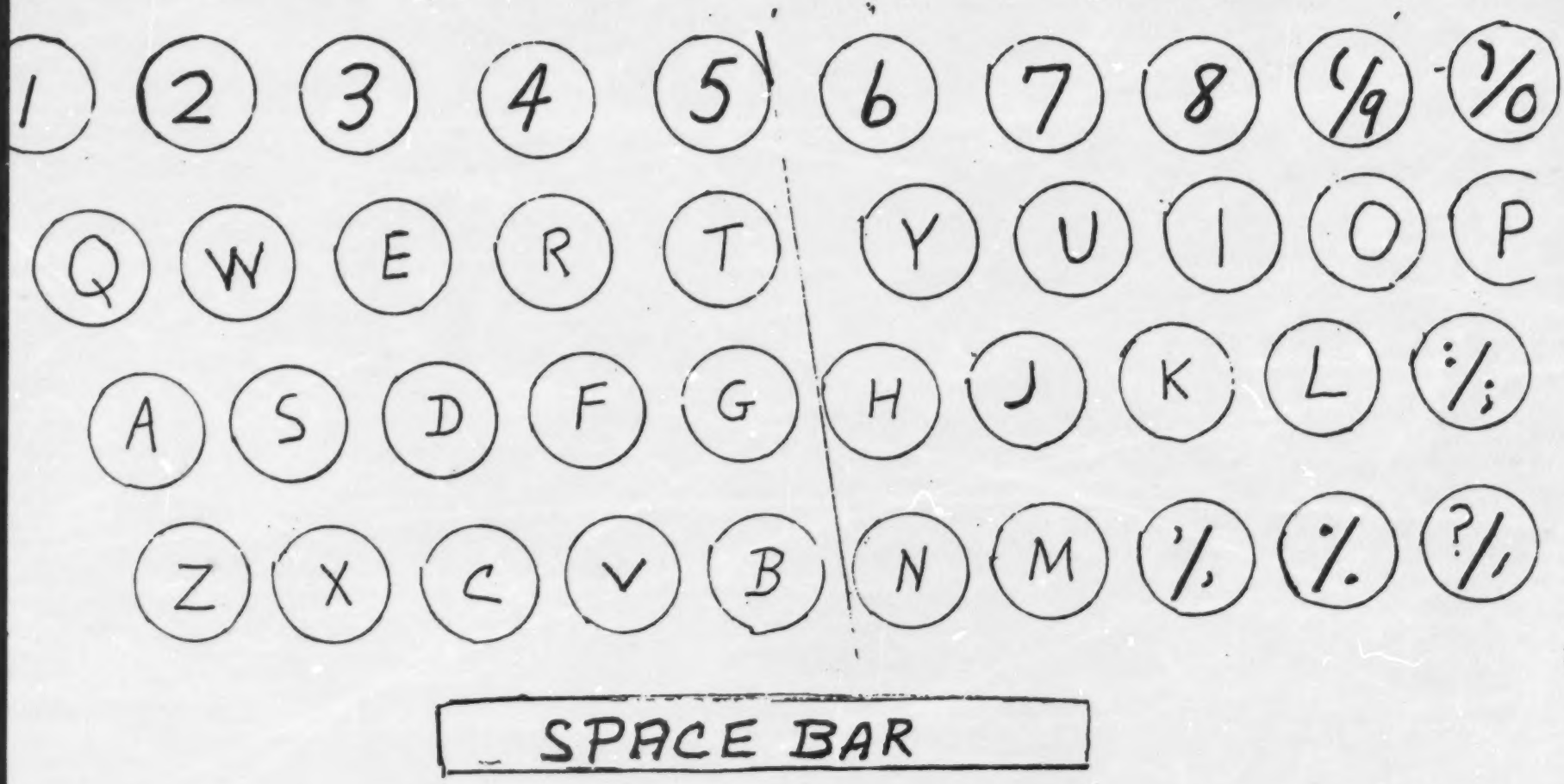
LEFT HAND

RIGHT HAND

28


1 2 3 4 5 6 7 8 9 0
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
SPACE BAR

aaa sss ddd fff fgf

jjj kkk lll ;;; jhj

aqa sws ded frf ftf

juj kik lol ;p; jyj

aza sxs dcd fvf fbf

jmj k,k l.l ;/; jnj

a1a s2s d3d f4f f5f

j6j j7j k8k l9l ;0;

IV. SCORING

A. Explanations

1. Method of Scoring:

The measure of productivity will be assessed by comparing the time needed to complete all tasks, with student NORMS. Quality will be assessed by the total number of errors upon completion of the typewriter key task procedures.

2. Work Performance Factors to be Observed:

- Student able to follow illustrations, charts, and diagrams.
- Student able to follow verbal instructions.
- Physical capacities needed to position the body correctly in a chair and also to manipulate the typewriter.

B. Forms

Task Observation Record

School_____

CLERICAL MACHINE OPERATOR TYPIST WORK SAMPLE

Task Observation Record

Critical Errors (5 points each)

_____1. Failure to place fingers on correct row of keys.

_____2. Failure to place fingers on correct letters of home row keys.

_____3. Jamming of keys.

_____4. Failure to manipulate the letter keys.

_____5. Failure to manipulate the number keys.

_____6. Failure to use space bar between sets of letters or numbers, for correct spacing.

_____7. Failure to manipulate the carriage return lever.

Observational explanations for 1 - 7.

Task Quality Errors (3 points each)

Using the correct fingers:

_____1. Failure to type each letter of home row three times each.

_____2. Failure to type third row sequence of letters.

_____3. Failure to type bottom row sequence of letters.

_____4. Failure to type number keys sequence.

_____5. Failure to manipulate space bar with thumb.

_____6. Failure to use carriage return lever at end point of given line to be typed.

_____7. Failure or neglect to always return fingers to home row keys while typing.

Observational explanations for 1 - 7

Put additional comments and observations below.

_____ Critical errors

_____ Task quality errors

_____ Min _____ Sec Total time

_____ Date taken

_____ Evaluator

_____ Student

Post Sample Interview Topics

1. Did you like or dislike the course tasks?
2. What do you think of typewriting now that you have completed the Work Sample?
3. Do you need more information about Clerical Typist Training?

If you should successfully complete this work sample, a typing program is offered at the following high schools in this general vicinity.

- Bedford High School
- Billerica High School
- Burlington High School
- Shawsheen Tech. (Billerica, MA)
- Tewksbury High School
- Wilmington High School

V. TECHNICAL DATA

A supplement to this manual is being developed at the time of this printing. It will include:

1. Norms
2. Reliability, test-retest studies
3. Validity
   a. Content validity - established through the Course Analysis based on methods suggested by U. S. Dept. of Labor Analysis techniques.
   b. Predictive Validity
      To be established through follow-up studies of students previously tested.

VI. MAINTENANCE AND CONSTRUCTION

There are no construction procedures for this Work Sample. The typewriter is to be placed on the desk. An enlarged typing chart is optional.

A. Maintenance

- The typewriter must be kept clean to avoid sticking of keys.
- The equipment should be returned to its proper place.

B. Materials List

These materials can be purchased or used through the school system offering the typing class or local store.

Equipment	Source	Price
Smith-Corona Portable Typewriter	Lechmere Sales Danvers, MA	129.00
Letter size typing paper	Boyds Stationery	7.00
Typing table or desk	In classroom	-

VII. REFERENCES

Korn, T. (ed.) A Work Sample Style Manual. Interface No. 10. Menomonic, WI.: Research and Training Center, University of Wisconsin - Stout, 1976.

United States Department of Labor, Dictionary of Occupational Titles, 3rd Edition. Washington, D. C.: United States Government Printing Office, 1965.

Handbook for Analyzing Jobs, Washington, D. C.: United States Government Printing Office, 1972.

Occupational Outlook Handbook, 1970-71 Edition. Washington, D. C.: United States Government Printing Office, 1970.

APPENDIX

Definition of Terms

GED - Is the general level of learning and reasoning acquired through schools, experience and self study. There are six GED difficulty levels, ranging from (6) the most difficult to (1) the simplest.

SVP - Is the special vocational preparation and training in terms of the total time required to prepare for an occupation. It ranges from SVP 1, short demonstrations only, to SVP 9, over ten years.

APT - Refers to aptitudes, which is the quickness and ease with which you can learn to do something. Aptitude definitions are included on a separate page in this manual.

WA - Work Activities:

1. Dealing with things and objects.
2. Involving business contacts.
3. Of a routine, definite, organized nature.
4. Involving direct personal contact to help or instruct others.
5. Resulting in recognition or appreciation from others.
6. Involving the communication of ideas and information.
7. Of a scientific and technical nature.
8. Involving creative thing.
9. Involving processes, methods or machines.
10. Involving working on or producing things

WS - Work situations are the conditions under which the work involved in any occupation takes place. There are ten types described and they have been related to the 66 Worker Trait Groups in the Guide for Occupational Exploration. They are:

1. Performing duties which change frequently.
2. Performing duties of a routine nature.
3. Planning and directing an entire activity.
4. Dealing with people.
5. Influencing peoples opinions, attitudes, and judgements.
6. Working under pressure.
7. Making decisions using personal judgement.
8. Making decisions using standards that can be measured or checked.
9. Interpreting and expressing feelings, ideas, or facts.
10. Working within precise limits or standards.

PD - Physical Demands are the physical requirements of an occupation and are described in six areas as follows:

1. Lifting, carrying, pushing and/or pulling.
2. Climbing and/or balancing.
3. Stooping, kneeling, crouching, and/or crawling.
4. Reaching, handling, fingering, and/or feeling.
5. Talking and/or hearing.
6. Seeing.

WC - Working Conditions are the physical surroundings of a worker in a job. The DOL lists six different types as follows:

1. Inside or outside.
2. Extremes of cold plus temperature changes.
3. Extremes of heat plus temperature changes.
4. Wet and humid.
5. Noise and vibrations.
6. Hazards.

Aptitudes are rated on a scale of 1 - Highest to 5 - Lowest as follows:

1 - Top 10% of the population
2 - Top third not including the top 10%
3 - Middle third of the population
4 - Lowest third not including lowest 10%
5 - Lowest 10%

The following are the definitions of the aptitudes:

G - General Learning Ability - The ability to "catch on" or understand instructions and underlying principles; the ability to reason and make judgements. Closely related to doing well in school.

V - Verbal Aptitude - The ability to understand meaning of words, and to use them effectively. The ability to comprehend language, to understand relationships between words and to understand meaning of whole sentences and paragraphs.

N - Numerical Aptitude - Ability to perform arithmetic operations quickly and accurately.

S - Spatial Aptitude - Ability to think visually of geometric forms and to comprehend the two-dimensional representation of three-dimensional objects. The ability to recognize the relationships resulting from the movement of objects in space.

P - Form Perception - Ability to perceive pertinent detail in objects or in pictorial or graphic materials. Ability to make visual comparisons and discriminations and see slight differences in shapes and shadings of figures and widths and lengths of lines.

Q - Clerical Perception - Ability to perceive pertinent detail in verbal or tabular material. Ability to observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetic computation. A measure of speed of perception which is required in many industrial jobs even when the job does not have verbal or numerical content.

K - Motor Coordination - Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make a movement response accurately and swiftly.

F - Finger Dexterity - Ability to move the fingers, and manipulate small objects with the fingers, rapidly and accurately.

M - Manual Dexterity - Ability to move the hands easily and skillfully. Ability to work with the hands in placing and turning motions.

MR - Mechanical Reasoning - The ability to understand mechanical principles (pulleys, gears, etc)

E - Eye-Hand-Foot Coordination - Moving the hands and feet together in response to visual signals or observations.

C - Color Discrimination - Seeing likenesses or differences in colors or shades. Identifying or matching certain colors. Selecting colors which go well together.